

Appendix F: Fish and Wildlife Inventory and Assessment

For the Lower Cedar River, Coal Creek, and May Creek Basins
of the Cedar River/Lake Washington Watershed

I-405, North Renton Project

King County, WA

Prepared by
Environmental Services Office

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INTRODUCTION

This assessment provides an overview of the fish and wildlife resources within the Lower Cedar River, May Creek, and Coal Creek basins. Current habitat conditions, known species distribution and occurrence, and the potential for species use within the study area are addressed.

Study Area

The study area is located in King County, within the Cedar-Sammamish Water Resource Inventory Area (WRIA) 8. The study area will include three watershed basins; the Lower Cedar River from the State Route (SR) 18 crossing to Lake Washington, May Creek from the headwaters to Lake Washington, and Coal Creek from the headwaters to Lake Washington.

Environmental Baseline

Land Use

The basins within the study area range from highly urbanized near Lake Washington to low-density residential. In the upper Cedar River, land is devoted almost entirely to forest preservation. May Creek is characterized by a mixture of land uses, including dense urban areas near in Renton and rural agricultural lands in the May Valley. The headwaters of Coal Creek arise on Cougar Mountain, within the Cougar Mountain Regional Wildland Park (CMRWP), a 3,108-acre park managed by King County for preservation and recreation opportunities. Land uses in the basins are predominantly a mix of residential and commercial forestry, with some agricultural uses. Heavy industrial and commercial uses occur in the lower reaches near Lake Washington.

Physical Setting

Within the study area, the Cedar River occurs lies within a relatively narrow (between 0.25 and 0.5 mile) floodplain, bordered by steep slopes.

Vegetation

The study area is dominated by mixed deciduous forests, particularly in the riparian areas adjacent to the Cedar River, and both Coal and May creeks. Black cottonwood is the dominant tree species, with red alder and big leaf maple also occurring in regular numbers. The shrub layer is dense, and includes blackberry (Himalayan, trailing, and cut-leaf), Indian plum, salmonberry, and Japanese knotweed. As elevation increases above the floodplains, the ridges and surrounding areas contain second- or third-growth coniferous tree species, including Douglas-fir, western red cedar, and western hemlock.

Terrestrial Resources

Data sources reviewed to assist in the identification of potential species occurrence in the study area included the Washington State Department of Fish and Wildlife (WDFW) Priority Habitats and Species (PHS) database, and previously completed studies on the habitat baseline conditions within the study area. The PHS database contains both point data for individual occurrences, as well as habitat descriptions for wildlife, including state- and federally listed threatened and endangered animals, plants, and fish. This data represents the best available science for species occurrence statewide.

Threatened and Endangered Species

The PHS database does not indicate the presence of any threatened or endangered species within the study area (WDFW, 2003). However, suitable habitat exists for the bald eagle (*Haliaeetus leucocephalus*). Several snags and large conifers occur throughout the study area, which are suitable for bald eagle nesting or foraging activities. Bald eagles forage and winter along the Cedar River and Lake Washington. Other potential forage areas include May Creek and Coal Creek; foraging also can occur at several lakes, ponds, and wetlands throughout the study area, especially during the winter when waterfowl tend to congregate.

Habitat and species occurrence

Riparian and Upland Forest

The habitat of highest value in the study area occurs within riparian areas and upland vegetated areas that are adjacent to wetlands. Riparian areas associated with the Cedar River, Coal Creek, and May Creek provide habitat for a wide variety of wildlife, in addition to several other ecological functions. Urban natural open space is land that has been preserved because it provides habitat for priority species or is an isolated remnant of natural habitat larger than 10 acres and surrounded by urban development. Urban natural open space within the study area includes Coal Creek Park, Coal Creek riparian area, and Renton riparian forest.

The forested riparian areas provide habitat for species including northwestern salamander (*Ambystoma gracile*), rough-skinned newt (*Taricha granulosa*), Pacific treefrog (*Pseudacris regilla*), red-legged frog (*Rana aurora*), black-capped chickadee (*Parus atricapillus*), chestnut-backed chickadee (*P. rufescens*), common bushtit (*Psaltiriparus minimus*), ruby-crowned kinglet (*Regulus calendula*), Bewick's wren (*Thryomanes bewickii*), spotted towhee (*Pipilo erythrophthalmus*), dark-eyed junco (*Junco hyemalis*), song sparrow (*Melospiza melodia*), great blue heron (*Ardea herodias*), osprey (*Pandion haliaetus*), great-horned owl (*Bubo virginianus*), blacktail deer (*Odocoileus hemionus columbianus*), rats (*Rattus* spp.) and a variety of small mammals, and numerous species of arthropods and terrestrial mollusks. Several species of waterfowl nest and forage along the rivers and creeks. Higher in the May Creek and Coal Creek basins, riparian and upland areas are utilized by larger mammals including elk (*Cervus elaphus*), cougar (*Puma concolor*) and black bear (*Ursus americanus*). Riparian forests provide relatively cool, moist habitats, which some small vertebrates and many low-mobility invertebrates require for survival. Moreover, riparian areas provide corridor and dispersal habitats, which are crucial to the survival of many species. Conversion from natural, forested areas to a developed landscape fragments key habitats, and these contiguous riparian corridors become increasingly important.

Common vertebrate species in upland forested areas include barred owl (*Strix varia*), northern flicker (*Colaptes auratus*), downy woodpecker (*Picoides pubescens*), hairy woodpecker (*P. villosus*), Steller's jay (*Cyanocitta stelleri*), red-breasted nuthatch (*Sitta canadensis*), western tanager (*Piranga ludoviciana*), winter wren (*Troglodytes troglodytes*), varied thrush (*Ixoreus naevius*), and eastern gray squirrel (*Sciurus carolinensis*).

Agricultural Lands and Road ROW

Small, remnant agricultural areas, mowed right-of-way (ROW), and vacant fields within the study area provide foraging areas and movement corridors (if shrub or tree cover is adjacent) for wildlife. These areas are regularly used by red-tailed hawks (*Buteo ja-maicensis*) for hunting meadow mice (*Microtus* spp.) and other small rodents. Red-tailed hawks in the study area typically perch on fence posts, utility poles, or nearby trees. Due to the extensive level of development resulting in farmland conversion within the study area, the importance of grass-dominated ROW as foraging habitat has likely increased. Other species using this habitat type include American kestrel (*Falco sparverius*), killdeer (*Charadrius vociferous*), Brewer's blackbird (*Euphagus cyanocephalus*), rufous hummingbird (*Selasphorus rufus*), moles (*Scapanus* spp.), and coyote (*Canis latrans*) (DEA, 2001).

Wildlife species that typically occur in a forested environment could occasionally use road ROW vegetated with small trees and/or shrubs. Such use would be temporary during movement between more suitable areas. These species may include the black-capped chickadee, chestnut-backed chickadee, common bushtit, ruby-crowned kinglet, Bewick's wren, spotted towhee, dark-eyed junco, song sparrow, and rats (DEA, 2001).

Urban Environment

Much of the urbanized portion of the study area is inhabited by species typical of developed areas. Development and associated landscaping provide habitat for species adapted to degraded and disturbed conditions. These species often include: American robin (*Turdus migratorius*), violet-green swallow (*Tachycineta thalassiana*), house sparrow (*Passer domesticus*), European starling (*Sturnus vulgaris*), American crow (*Corvus brachyrhynchos*), raccoon (*Procyon lotor*), Virginia opossum (*Didelphis virginiana*), and several small mammal species (DEA, 2001). Fragmented areas of riparian vegetation provide limited wildlife corridor habitat through developed areas.

Aquatic Resources

Threatened and Endangered Species

Potential habitat for listed species including Puget Sound Chinook salmon (*Oncorhynchus tshawytscha*) and bull trout (*Salvelinus confluentus*). Additionally, Puget Sound/Strait of Georgia coho salmon (*O. kisutch*), a federal candidate species, occurs in the study area.

Habitat and species occurrence

Cedar River Basin

The lower Cedar River Basin as it is defined by this study, ends at approximately river mile (RM) 14.8. Much of the lower basin could be characterized as rural, however development is expanding out from the urban centers of Renton and Maple Valley. Over the past 150 years, much of the mainstem aquatic habitat in the lower Cedar River Basin has been dramatically altered by human activities (Kerwin, 2001). Agriculture, coal mining, railroad construction, and light rural development within the floodplain, resulted in land clearing and timber harvest. Upstream from the study area, the City constructed the Landsburg Diversion Dam, which diverts as much as 22 percent of the Cedar River's

flow to provide a primary source of the municipal water supply (Kerwin, 2001). Flood control efforts, development, and railroad construction, have resulted in levee construction and a substantial reduction in river width over time (Kerwin, 2001).

The Renton Reach (RM 0-1.6) of the lower Cedar River is entirely artificial and is completely constrained between levees and revetments (Kerwin, 2001). The Cedar River was diverted out of the Black River/Green River system (Buchanan, 2003). The banks of the lower Cedar River are lined with a variety of man-made materials including concrete, gabion baskets, riprap, steel and wood piling, and brick walkways (Buchanan, 2003). Habitat consists of one long riffle with little habitat complexity. This reach experiences water quality degradation due to the proximity of industrial and urban land uses (Kerwin, 2001). The riparian habitat is sparse to non-existent, large woody debris (LWD) is lacking, and the river is isolated from its floodplain (Kerwin, 2001). The Renton Reach is also a sediment deposition area, which results in a high percentage of fines in the substrate (Kerwin, 2001). However, this reach serves as a migration route and provides spawning and limited rearing habitat to Chinook salmon, sockeye salmon (*O. nerka*), coho salmon, steelhead (*O. mykiss*), coastal cutthroat trout (*O. clarki*), and longfin smelt (*Spirinchus thaleichthys*).

The lower Cedar River mainstem (RM 1.6 to 14.8 [and beyond]) is also largely confined and stabilized by levees and revetments (Kerwin, 2001). These man-made structures cut off some gravel sources for the system. The riparian area is poorly developed and it consists primarily of deciduous species. Riffles dominate the stream habitat. A few wetlands, including Cavanaugh Pond and the Taylor Creek wetlands provide either potential salmonid rearing habitat or coho and sockeye salmon spawning habitat in this reach (Kerwin, 2001). Many lower Cedar River tributaries including Maplewood Creek, Molasses Creek, and Madsen Creek (RM 4.0 to 5.0 vicinity), are highly urbanized and are within the Urban Growth Boundary of Renton (Buchanan, 2003). However, three tributaries, Taylor, Peterson, and lower Rock Creeks provide good to excellent salmonid habitat higher (Kerwin, 2001, Buchanan, 2003). Bull trout have been documented in the lower Cedar River, but spawning habitat does not exist below Cedar Falls several miles upstream of the study area. Bull trout use in the lower Cedar River is likely limited to foraging. Non-salmonid species potentially present in the lower Cedar River include sculpins (*Cottus* spp.), dace (*Rhinichthy* spp.), stickleback (*Gasterostus aculeatus*), and lampreys (*Lampetra* spp.).

May Creek Basin

The May Creek Basin encompasses a 14-square mile area between the Coal Creek and Cedar River Basins, and is a tributary to Lake Washington. Approximately 26 miles of mapped streams, two small lakes, and over 400 acres of wetlands occur within the basin (Foster Wheeler, 1998). Land cover types include developed communities in Renton, Newcastle, and around Lake Boren, Honey Creek, and Lake Kathleen; forests, rural residences, and small farms are more typical land uses in May Valley (Foster Wheeler, 1998). A portion of the large regional park on Cougar Mountain is located within the basin. Logging, coal mining, and agricultural activities have resulted in channelized streams, floodplain encroachment, and eroding slopes. The expansion of urban and suburban development continues to increase the amount of land clearing and impervious surface in the basin. Much of the lower basin is within the designated Urban Growth Area.

The lower four miles of May Creek are within an urbanized area. This portion of the creek experiences high sediment loading and lacks current and future sources of LWD (Foster Wheeler, 1998). The lack of LWD has resulted in losses of habitat complexity, specifically pool habitat. Sediment deposition in lower May Creek has increased due to forest removal, the presence of rock quarries, and the expansion of road networks. Vegetation removal throughout the basin has resulted in higher maximum flows and lower minimum flows. Higher flows than what naturally occurred can result in stream substrate destabilization and salmonid incubation disruption (Foster Wheeler, 1998). Despite the current habitat conditions, the lower reaches of May Creek experience the heaviest use by fish (Foster Wheeler, 1998). Steelhead, cutthroat trout, and Chinook, coho, and sockeye salmon spawn in May Creek. Spawning gravel, although embedded, likely supports successful incubation (Buchanan, 2003). Non-salmonid species potentially present include sculpins, dace, stickleback, lampreys, and anecdotal reports of peamouth chub (*Myl-cheilus caurinus*) (Buchanan, 2003).

From approximately RM 3.9 to 7.0, the riparian area of May Creek is heavily impacted by grazing (Foster Wheeler, 1998). Agricultural activities in May Valley have left historic wetlands drained and May Creek channelized (Buchanan, 2003). The South Fork of May Creek starts at RM 7.0. Portions of the South Fork go dry in the summer from RM 7.0 to 9.1. A 128-foot-long culvert blocks anadromous fish passage at RM 7.7. The North Fork of May Creek parallels SR 900, resulting in degraded riparian conditions and channelization. The presence of three quarries along the North Fork results in high sediment loading in the system (Foster Wheeler, 1998). The East Fork of May Creek flows into the South Fork at RM 7.2. Habitat conditions in the East Fork are highly degraded due to the presence of berms, culverts, and man-made ponds (Foster Wheeler, 1998).

The primary limiting factor for Chinook and sockeye salmon in May Creek is likely available spawning area and incubation success (Foster Wheeler, 1998). The primary limiting factor for coho salmon, steelhead, and cutthroat trout in May Creek is likely the availability of high quality rearing and overwintering habitat (Foster Wheeler, 1998).

Coal Creek Basin

The Coal Creek Basin is directly north of the May Creek Basin. Coal Creek is a tributary of Lake Washington and drains approximately 4,222 acres. The lower 3,020 acres of the basin is within the designated Urban Growth Area (DEA, 2001). The cities of Bellevue, Renton, and Newcastle all extend into the basin. Impervious surface covers almost one-fourth of the drainage area (King County, 1987). The Coal Creek Basin Plan (King County, 1987) reported that habitat for anadromous fish was generally good in the upper reaches of Coal Creek, but conditions deteriorated in the lower basin due to riparian clearing and sedimentation (DEA, 2001). The basin has been altered by historic intensive coal mining and by rapid urbanization (DEA, 2001). The lower basin contains high amounts of impervious surface but the upper watershed is largely preserved due to the presence of the Cougar Mountain Park.

Water temperatures likely limit natural production of salmonids in Coal Creek (Kerwin, 2001).

Mining debris and excavation have significantly altered water quality within the system (King County, 1987). Conductivity of surface water has been elevated throughout the

basin and concentrations of several metals were found to exceed acute and chronic toxicity levels for salmonids (DEA, 2001). Recent personal observations confirm the poor water quality conditions within Coal Creek (Buchanan, 2003). Excessive sediment from mining debris, landslides, and erosion has contributed to the formation of a large delta extending into Lake Washington at the mouth of Coal Creek (DEA, 2001). The stream was channelized in this vicinity and was diverted several times for changing land uses along the lakeshore (May, 1986; King County, 1987). Portions of this delta have been dredged for recreational boat traffic (Buchanan, 2003). The baffled culvert that conveys Coal Creek under I-405 inhibits fish passage (Buchanan, 2003).

Despite the existing habitat conditions, coho and sockeye salmon, and cutthroat and rainbow trout utilize Coal Creek (King County, 1987). Limited fish utilization surveys have been conducted, but existing information indicates adult salmonids are returning in low numbers (Kerwin, 2001). WDFW has been supplementing the coho population in Coal Creek in recent years (Kerwin, 2001). Non-salmonid species potentially present include sculpins, dace, stickleback, and lampreys. The Coal Creek tributary of Newport Creek has coho salmon and cutthroat trout spawning populations (Buchanan, 2003). Habitat conditions in Newport Creek are significantly better than in Coal Creek (Buchanan, 2003). Despite channel incising and mass wasting, Newport Creek contains suitable spawning gravels, some LWD, and adequate shading from a deciduous tree-dominated riparian area (Buchanan, 2003).

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